

# **PORTABLE SEAT BACK DISPLAY**

## **BACKGROUND OF THE INVENTION**

### **1. FIELD OF THE INVENTION**

[0001] The present invention relates to a display device, and more particularly  
5 to a portable seat back display for a back of a chair or seat which may be used in a  
vehicle or other locations.

### **2. PRIOR ART**

[0002] Due to developments in the modern economy and the prevalence of  
constructed roads, automobiles have become a major vehicle for transportation  
10 and commuting. Some buses are equipped with electronic devices such as  
televisions for entertaining passengers. Some of these televisions can be  
mounted in the passenger's seat with controls for the device additionally mounted  
in the seat. However, these televisions are permanently and immovably fixed to  
the backs of the chairs. When a passenger adjusts the degree of reclining for the  
15 chair, the sloping degree of the television is adjusted as well. This can make it  
uncomfortable or inconvenient for the passenger watching the television.

For small cars, televisions can be molded into the dashboard near the  
instrument panel, which makes it inconvenient for passengers in the backseats to  
watch the television.

20 [0003] Furthermore, electronic devices are quite expensive and therefore  
security systems are required in order to prevent the device from being stolen.

## SUMMARY OF THE INVENTION

[0004] Accordingly, an object of the present invention is to provide a display for a back of a chair which is easily adjusted or tilted in the back of the chair. This eliminates discomfort for users when the reclining degree or angle of the back of the chair is adjusted.

[0005] Another object of the present invention is to provide a display for a back of a chair which is convenient to remove or install in the back of the chair. In this way, the display can be taken out of the automobile when the owner leaves the automobile and prevents the display from being stolen.

[0006] To achieve the above-mentioned objects, a portable seat back display in accordance with the present invention comprises a housing, a display module and a connecting mechanism. The housing includes a frame as a receiving chamber in the back of a chair. The frame includes a backboard and side walls thereby defining a receiving space therebetween. The backboard also has a receptacle. The display module is detachably installed in the receiving space of the frame and has a complementary connector for connecting with the receptacle in the frame thereby providing the display module with a power supply and signals. The connecting mechanism is connected between the housing and the display module. The display module is rotatable in the receiving space of the housing.

[0007] A plurality of screw holes is defined in the backboard for fixing the frame in the receiving chamber to the back of the chair with screws. The frame further includes an upper wall with a support at the front thereof for preventing the display module from over-rotating.

[0008] The connecting mechanism includes a pair of guiding grooves defined in the side walls and a pair of posts formed on both sides of the display module. An arcuate recess is defined in each guiding groove, and the posts are rotatably received in the arcuate recesses.

5 [0009] Other objects, advantages and novel features of the present invention will be drawn from the following detailed embodiment of the present invention with attached drawings, in which:

#### BRIEF DESCRIPTION OF THE DRAWINGS

[0010] Fig. 1 is an exploded view of a portable seat back display according to  
10 an embodiment of the present invention;

[0011] Fig. 2 is an assembled view of Fig. 1;

[0012] Fig. 3 is a schematic and cross-sectional view of Fig. 2; and

[0013] Fig. 4 is a side elevational view showing the display rotating relative to the back of the chair according to an embodiment of the present invention.

#### 15 DESCRIPTION OF THE PREFERRED EMBODIMENT

[0014] Referring to Figs. 1-4, the portable seat back display of the present invention includes a housing 10, a display module 20 and a connecting mechanism 40. The housing 10 includes a frame 11 which includes a backboard 13 and two side walls 14 thereby defining a receiving space 12 therebetween. A plurality of  
20 screw holes 131 is defined in the backboard 13 for fixing the frame 11 in the receiving chamber 12 to the back 30 of a chair with screws. Obviously, the frame

11 may be fixed in the receiving chamber to the back 30 through adhering, riveting, soldering or other connection technologies. The backboard 13 has a receptacle 15 for connecting with a power supply line and a signal line formed in the back 30 of the chair and providing the display module 20 with power supply and display  
5 signals. The frame 11 further includes an upper wall with a support 16 at the front thereof for preventing the display module 20 from over-rotating.

[0015] The display module 20 is removably installed in the receiving space 12 of the frame 11 through the connecting mechanism 40. The connecting mechanism 40 includes a pair of guiding grooves 141 defined in the side walls 14  
10 and a pair of posts 21 formed on both sides of the display module 20. Each guiding groove 141 is slightly sloping with an arcuate recess 142 defined in an end thereof proximate to the backboard 13. The posts 21 of the display module 20 are extendable into and slidable along the guiding grooves 141 and then are rotatably received in and engage with the arcuate recesses 142 thereby securing  
15 the display module 20 in the receiving space 12 of the frame 11. When it is required to detach the display module 20, the posts 21 are disengaged from the arcuate recesses 142 and are slid out along the guiding grooves 141 whereby the display module 20 is detached from the housing 10. Obviously, the connecting mechanism 40 may be configured in other forms. The guiding grooves 141 may  
20 be configured in both sides of the display module 20 and the posts 21 may be configured at the both side walls 14 of the frame 11.

[0016] When the display module 20 is secured in the frame 11, a complementary connector 22 of the display module 20 connects with the receptacle 15 of the frame 11 thereby providing the display module 20 with power

supply and display signals.

[0017] Since the display module 20 is rotatable about the posts 21 in the receiving space 12 of the housing 10, when the sloping degree or reclining angle of the back 30 of the chair is adjusted, the display module 20 is adjustable through  
5 rotation to make it comfortable to view the display module 20 (see Fig. 4). Thus, the display for the back 30 of the chair of the present invention is easily movably assembled to the back of the chair thereby preventing discomfort to the user when the sloping degree of the back of the chair is adjusted.

[0018] Since the display module 20 is conveniently detachable from the  
10 housing 10, the display module 20 can be taken away from an automobile when the owner leaves the automobile thereby preventing the display from being stolen.

[0019] It is understood that the invention may be embodied in other forms without departing from the spirit thereof. Thus, the present examples and embodiments are to be considered in all respects as illustrative and not restrictive,  
15 and the invention is not to be limited to the details given herein.